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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,290	08/23/2006	Takeo Tokiai	294806US0PCT	6806
22850 7590 03/15/2012 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER STANLEY, JANE L				
ART UNIT 1767		PAPER NUMBER		
NOTIFICATION DATE 03/15/2012		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary****Application No.**

10/590,290

**Applicant(s)**

TOKIAL, TAKEO

**Examiner**

JANE L. STANLEY

**Art Unit**

1767

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 1,2 and 4-9 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1,2 and 4-9 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-SB-03)  
Paper No(s)/Mail Date 20111025
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

#### **DETAILED ACTION**

Applicant's reply filed **14 November 2011** in response to the non-final Office action mailed **13 May 2011** has been fully considered. Applicant filed no new claim amendments and as such **claims 1, 2 and 4-9** are currently pending, wherein **claims 2, 5 and 6** are as originally filed and **claims 1, 4 and 7-9** are as presented previously. Applicant's acknowledgment and summary of the interview conducted **4 August 2011** is noted.

#### ***Information Disclosure Statement***

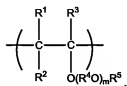
The information disclosure statement (IDS) submitted on **25 October 2011** was filed after the mailing date of the non-final Office action on **13 May 2011**. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Claim Rejections - 35 USC § 103***

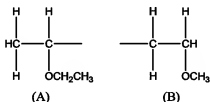
The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-2 and 4-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Egawa et al. (US 5,518,643) in view of Kaneko et al. (US 5,801,132).

**Regarding claims 1-2 and 4-7,** Egawa teaches a lubricating oil composition comprising a refrigerant and a polyvinyl ether compound having units expressed by the general formula of:



wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> are H or a hydrocarbon group of C1-8, R<sup>4</sup> is a bivalent hydrocarbon group of C2-10, R<sup>5</sup> is a hydrocarbon group of C1-10 and m is 0-10 (abstract). Egawa further teaches that R<sup>5</sup> may be the same or different between the constituting units (col 4 ln 43-44), hydrocarbons of C8 or less are preferable and that when m is zero, alkyl groups of C1-6 are particularly preferred (col 5 ln 65 to col 6 ln 1). Egawa teaches that R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> are preferably hydrogen (col 5 ln 9-12). Egawa further teaches examples of the polyvinyl ether compounds having end units of



which meets the instant claim 1 limitations of p being an integer of 1 or more and q being an integer of 1 or more, of R<sup>5</sup> representing a methyl group and R<sup>6</sup> representing an ethyl group, and of R<sup>3</sup> and R<sup>4</sup> representing a hydrogen atom, as well as the instant claim 2 limitations of p/(p+q) is 0.1 or more (see Example preparations 1-3).

Egawa et al. teaches the refrigerants to include hydrofluorocarbons or hydrochlorofluorocarbons (abstract) including pentafluoroethane and other conventional

Flon refrigerants (col 9 ln 5-20) but does not specifically teach a C1-C8 hydrocarbon compound. However, Kaneko et al. teaches compositions comprising similar polyvinyl ether polymers (col 2 ln 46; col 4 ln 4-38; col 5 ln 46-52; col 7 ln 12-19 and 27-33) and refrigerants (col 15 ln 53 to col 16 ln 13). Kaneko et al. teaches hydrofluorocarbons including pentafluoroethane (col 15 ln 62) and hydrocarbons such as propane, cyclopropane, butane, isobutane and pentane (col 16 ln 5-6) to be refrigerant equivalents. Kaneko et al. and Egawa et al. are analogous art because they are both concerned with the same field of endeavor, namely refrigerant oil compositions comprising a polyvinyl ether base oil and a refrigerant. In view of the recognition by Kaneko et al. that hydrofluorocarbon refrigerants and the aforementioned hydrocarbon refrigerants are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art to substitute the hydrofluorocarbon with a hydrocarbon refrigerant and thereby arrive at the present invention. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable (See *In re Ruff* 118 USPQ 343 (CCPA 1958; MPEP 2144.06).

Egawa teaches kinematic viscosity values for the polyvinyl ether compounds alone but does not specifically teach that the *mixture* viscosity of the refrigerating oil composition comprising both a refrigerant (A) and polyvinyl ether base oil (B) is 0.1 mm<sup>2</sup>/s or more, or 0.5 mm<sup>2</sup>/s or more when measured at 90 °C and 2.3 MPa. However, Egawa teaches that the polyvinyl ether compound has a kinematic viscosity of 5 to 1000

cSt at 40 °C before mixing with the refrigerant (col 8 ln 5-14). Egawa is silent as to the pressure at which the measurement(s) was/were obtained. However, as the polyvinyl ether base oil and refrigerant made obvious by Egawa in view of Kaneko are the polyvinyl ether and hydrocarbon claimed and are present in the claimed amounts, it is implicit that the polyvinyl ether base oil and refrigerant would have this property, absent evidence to the contrary.

Egawa does not specifically teach that the solubility of the refrigerant (instant A) in the polyvinyl ether base oil (instant B) is 40 mass% or less, 2 to 40 mass%, 2 to 30 mass% or 5 to 25 mass% when measured at 40 °C and 1.2 mPa. However, as the polyvinyl ether base oil and refrigerant made obvious by Egawa in view of Kaneko are the polyvinyl ether and hydrocarbon claimed and are present in the claimed amounts, it is implicit that the polyvinyl ether base oil and refrigerant would have this property, absent evidence to the contrary.

**Regarding claim 8**, Egawa in view of Kaneko renders obvious the composition set forth above. Egawa further teaches the average molecular weight of the polyvinyl ether compound is from 150 to 4,000 (col 8 ln 14-16).

**Regarding claim 9**, Egawa in view of Kaneko makes obvious the composition set forth above.

Egawa does not specifically teach the polyvinyl ether compound (instant component B) to have an oxygen atom content of 10 mass% or more. However, Egawa teaches a 150 to 4,000 MW polyvinyl ether with the formula units set forth above including the combination of methoxy and ethoxy units (see above). There exists a

plurality of situations in which the polyvinyl ether of Egawa will intrinsically have an oxygen atom content of 10 mass% or more.

### ***Response to Arguments***

The 35 U.S.C. 103(a) rejection of **claims 1-2 and 4-9** as unpatentable over Egawa et al. (US 5,518,643) in view of Kaneko et al. (US 5,801,132) is maintained. Applicant's arguments (Remarks pages 2-7) have been fully considered but were not found persuasive.

Regarding Applicant's comments (see Remarks pages 3-5), such does not constitute sufficient evidence or support that the polyvinyl ether polymers of Egawa would not also be miscible to the instant desired degree with a non-fluorinated hydrocarbon refrigerant. Applicant appears to be alleging that the "compatibility" discussed by Egawa constitutes complete miscibility.

Applicants assert that Egawa does not teach or suggest specific "compatibility requirements" (see Remarks pages 3-4). As set forth in the previous office action the compatibility requirements discussed by Applicant were deemed to be properties inherent/intrinsic to the compounds and the combination thereof as based on a 103(a) rejection of a combination of two references. Applicant must provide evidence of record demonstrating that such would not be the case and furthermore, it is noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.

1986). Applicants also point to *In re Antoine* regarding result-effective variables, however, the previously set forth office action did not rely on or invoke a result-effective variable argument. It is noted that instant claim 1 does not include amount limitations on either the refrigerant (A) or the base oil (B).

Applicants argue that Kaneko teaches the hydrofluorocarbon refrigerants as preferred and the hydrocarbon refrigerants as "non-preferred" which constitutes a "leading-away" from the instant invention and that the hydrofluorocarbon and hydrocarbon refrigerants are not equivalent and interchangeable (see Remarks page 4). First it is noted that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments, and it is also noted that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (See MPEP 2123 [R-5]; *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)). Second, while Kaneko teaches that hydrogen-containing Flon refrigerants are preferred, Kaneko also teaches that other employable refrigerants may be used instead including hydrocarbon compounds such as propane, cyclopropane, butane, isobutane and pentane (See Kaneko, col 15 *In* 54 to col 16 *In* 7). Such constitutes a recognition by Kaneko that both fluorinated and nonfluorinated hydrocarbon refrigerants are useful in the same environment for the same predictable result and as such are equivalent and interchangeable. Kaneko's teaching that fluorinated hydrocarbon refrigerants are preferable does not constitute a teaching away.



Applicant argues (Remarks page 5) that Egawa and Kaneko fail to appreciate the "myriad of problems" with which the instant invention is concerned. In response to Applicants' repeated argument that the cited art fails to recognize the problem solved by the claimed methods, Applicant is reminded that the rejection under 35 U.S.C. 103(a) is based upon a combination of references and that the reason or motivation to modify the prior art reference(s) may often suggest what the inventor has done, but for a different purpose or to solve a different problem. Furthermore, it is noted that it is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by Applicant. The motivation question arises in the context of the general problem confronting the inventor, rather than the specific problem solved by the invention (see *In re Kahn*, 441 F.3d 977, 987, 78 USPQ 2d 1329, 1336 (Fed. Cir. 2006); see also *Cross Med. Prods., Inc. v. Medtronic Sofamore Danek, Inc.*, 424 F.3d 1293, 1323, 76 USPQ2d 1662, 1685 (Fed. Cir. 2005) one of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings; see also *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990); MPEP 2144 and 2141.01).

Applicant's provided comparison table is not found persuasive (Remarks page 6). Again, a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments, and it is also noted that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (See MPEP 2123 [R-5]; *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)). Applicant appears to be

concerned with Egawa's teaching of "Et homopolymer (iso-Pr homopolymer)" (no citation provided). However, Egawa clearly teaches in general (col 4 ln 43-44; col 5 ln 65 to col 6 ln 1) and specific examples wherein the polyvinyl ether compound is a Me/Et copolymer (see examples 1-3). The refrigerants have been discussed above.

Applicant further alleges (Remarks pages 6-7) unexpected results but has provided no evidence in support of such. Further, the instant conditions (i) and (ii) appear to be no more than that which would flow naturally from the combination of components made obvious by Egawa in view of Kaneko.

The Examiner notes that Applicant's repeated arguments (see Remarks pages 4-5, and 6-7) to "replacing the oil composition of Kaneko with the base oil of Egawa" are improper as they are not commensurate with the rejection as set forth. The rejection is based upon Egawa in view of Kaneko, wherein the secondary reference of Kaneko is relied upon to teach the claimed C1-C8 hydrocarbon compound (A) and not the base oil (B). The base oil (B) limitation is met by the teachings of the primary reference of Egawa.

Additionally, Applicant's repeated arguments to the base oils taught by Kaneko constitutes bodily incorporation, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In pointing out that Kaneko teaches polyvinyl ether

base oils, the Examiner was merely demonstrating the manner(s) in which Kaneko and Egawa constitute analogous teachings. Both Kaneko and Egawa teach combining similar polyvinyl ether base oils with refrigerants. The rejection **was not** based upon substitution of the base oil of Kaneko with the base oil of Egawa as asserted by Applicant.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE L. STANLEY whose telephone number is (571)270-3870. The examiner can normally be reached on Mon.-Thurs. 7:30 am - 5 pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JLS/

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1767